

Mixed Nuts

Trevor is 5 years more than half his mother's age when he boards a train leaving Los Angeles. He is traveling south on a train numbered with a tens digit that is 4 more than twice the ones digit at the same time another train leaves San Diego heading north and carrying mixed nuts. If he needs 50 pounds of mix that is 25% cashew and the entire task takes him 20 minutes by himself, how much longer will it take if he gets help from Celina who has 40 coins and needs a box that is 7 cm longer than 3 times the width so she can invest part of the money at 6% and earn interest of \$22.50. How old is Trevor?

Put Life Into Algebra

- Birthday Party
- Silkscreen T-shirts
- Health Club
- Carnival Rides
- College Tuition
- Cell Phone Plans
- Text Message Plans
- Pay-Per-View Plans

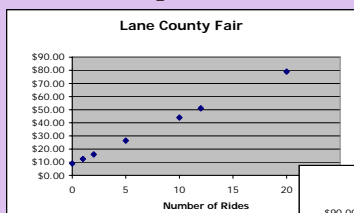
Put *life* Into Algebra

- Mixed Nuts and Life
- Ways to put life into Algebra
- Lane County Fair
- Text Messages
- Market Night and Snow Cones
- Put Life Into *Your* Algebra
- Modeling Life and Meeting Standards

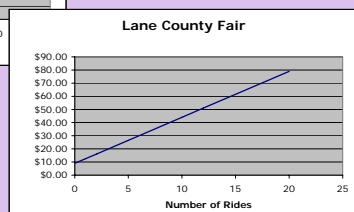
Ways to Put Life Into Algebra

1. Traditional
Emphasis on learning skills and procedures first. Meaning is usually delayed and often avoided.
2. Flip the Order
Establish meaning before learning skills and procedures.
3. Restructure
Develop concepts, skills and procedures by starting with a real-life context and using a meaningful approach.

The cost for admission at the Lane County Fair is \$9.00 for an adult. Ride tickets sell for \$0.50 each. Each ride requires seven tickets.



Number of Rides	Total Cost
0	\$9.00
1	\$12.50
2	\$16.00
5	\$26.50
10	\$44.00
12	\$51.00
20	\$79.00



The cost for admission at the Lane County Fair is \$9.00 for an adult. Ride tickets sell for \$0.50 each. Each ride requires seven tickets.

Process or Arrow Diagram

Rides "n" $\xrightarrow{\times 3.50}$ $\xrightarrow{+ 9.00}$ Total Cost c(n)

Equation

$$c(n) = 3.50n + 9.00$$

n represents the number of rides and
c(n) represents the total cost

Evaluating Expressions

To find the total cost with 15 rides evaluate the expression: $c(15) = 3.50(15) + 9.00$

$$\begin{array}{ccccc} \text{Rides} & & \times 3.50 & & + 9.00 & & \text{Total Cost} \\ \text{"15"} & \xrightarrow{\quad} & & \xrightarrow{\quad} & & & c(15) \end{array}$$

Solving Equations

To find the number of rides if total cost is \$100 solve the equation: $100 = 3.50n + 9.00$

$$\begin{array}{ccccc} \text{Rides} & & & & \text{Total Cost} \\ \text{"n"} & \xleftarrow{\quad} & \xleftarrow{\quad} & & 100 \\ & \div 3.50 & - 9.00 & & \end{array}$$

Monthly Text Plans

Verizon

\$5.00 for 250 free.
\$0.15 per text message

Sprint/Nextel

\$5.00 for 300 free.
\$0.20 per text message

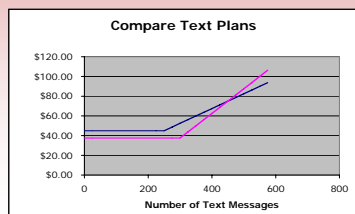
What does it all mean? Explain.

Verizon

$$C(t) = 0.15(t - 250) + 44.95$$

Sprint/Nextel

$$C(t) = 0.20(t - 300) + 37.50$$



Text	Verizon	Sprint
250	\$44.95	\$37.50
275	\$48.70	\$37.50
300	\$52.45	\$37.50
325	\$56.20	\$37.50
350	\$59.95	\$37.50
375	\$63.70	\$37.50
400	\$67.45	\$37.50
425	\$71.20	\$37.50
450	\$74.95	\$37.50
475	\$78.70	\$37.50
500	\$82.45	\$37.50
525	\$86.20	\$43.75
550	\$89.95	\$50.00
575	\$93.70	\$56.25

Snow Cones

Space Rental = \$50.00

Selling Price = \$2.50

Ice = \$1.99 for 20 lbs.

Cups = \$9.00 for 200

Syrup = \$6.50 per qt.

Snow Cone = 12 oz. crushed ice + 2 oz. syrup

Cost vs. Revenue vs. Profit

Let "n" represent the number of snow cones.

Let "r(n)" represent total revenue

Let "c(n)" represent total cost

Let "p(n)" represent total profit

Cost: $c(n) = 50.00 + 0.52n$

Revenue: $r(n) = 2.50n$

Profit: $p(n) = r(n) - c(n)$

$$p(n) = 2.5n - (50 + 0.52n)$$

Modeling Life and Algebra Standards

- Solving linear equations (4.0)
- Solving multi-step equations (5.0)
- Graphing linear equations (6.0)
- Writing equations using point/slope (7.0)
- Solving systems of equations (9.0)
- Relations and functions (16.0, 19.0)
- Domain and range (17.0)